

Release notes for ENDF/B Development n-061_Pm_148
evaluation

ENDF
B-VII.dev

April 26, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT=6152, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT=6152, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      214 TO      251
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT=6152, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT=6152, MF= 1, MT=451
MOD =      1 OUT OF RANGE      0 -      0      RECORD NUMBER      214
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 2, MT=151 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6152, MF= 2, MT=151
SECTION 2/151 NOT IN DIRECTORY      RECORD NUMBER      253
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 1 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 1
SECTION 3/ 1 NOT IN DIRECTORY      RECORD NUMBER      532
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY      RECORD NUMBER      569
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 4
SECTION 3/ 4 NOT IN DIRECTORY      RECORD NUMBER      604
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 16
SECTION 3/ 16 NOT IN DIRECTORY      RECORD NUMBER      619
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 17 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 17
SECTION 3/ 17 NOT IN DIRECTORY RECORD NUMBER 631

8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 22
SECTION 3/ 22 NOT IN DIRECTORY RECORD NUMBER 638

9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 28
SECTION 3/ 28 NOT IN DIRECTORY RECORD NUMBER 652

10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 32 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 32
SECTION 3/ 32 NOT IN DIRECTORY RECORD NUMBER 663

11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 33 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 33
SECTION 3/ 33 NOT IN DIRECTORY RECORD NUMBER 672

12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 51 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 51
SECTION 3/ 51 NOT IN DIRECTORY RECORD NUMBER 681

13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 52 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 52
SECTION 3/ 52 NOT IN DIRECTORY RECORD NUMBER 696

14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 3, MT= 91
SECTION 3/ 91 NOT IN DIRECTORY RECORD NUMBER 710

15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=102 (0): Directory (b)

- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=102 | RECORD NUMBER | 723 |
| SECTION 3/102 NOT IN DIRECTORY | | |
16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=103 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=103 | RECORD NUMBER | 742 |
| SECTION 3/103 NOT IN DIRECTORY | | |
17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=104 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=104 | RECORD NUMBER | 757 |
| SECTION 3/104 NOT IN DIRECTORY | | |
18. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=105 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=105 | RECORD NUMBER | 770 |
| SECTION 3/105 NOT IN DIRECTORY | | |
19. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=106 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=106 | RECORD NUMBER | 784 |
| SECTION 3/106 NOT IN DIRECTORY | | |
20. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 3, MT=107 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 3, MT=107 | RECORD NUMBER | 795 |
| SECTION 3/107 NOT IN DIRECTORY | | |
21. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 2 (0): Directory (b)
- | | | |
|--|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 2 | RECORD NUMBER | 811 |
| SECTION 4/ 2 NOT IN DIRECTORY | | |
22. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 16 (0): Directory (b)
- | | | |
|---|---------------|-----|
| ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 16 | RECORD NUMBER | 961 |
| SECTION 4/ 16 NOT IN DIRECTORY | | |
23. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 17 (0): Directory (b)

- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 17 | |
| | SECTION 4/ 17 NOT IN DIRECTORY | RECORD NUMBER 972 |
24. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 22 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 22 | |
| | SECTION 4/ 22 NOT IN DIRECTORY | RECORD NUMBER 983 |
25. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 28 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 28 | |
| | SECTION 4/ 28 NOT IN DIRECTORY | RECORD NUMBER 994 |
26. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 32 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 32 | |
| | SECTION 4/ 32 NOT IN DIRECTORY | RECORD NUMBER 1005 |
27. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 33 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 33 | |
| | SECTION 4/ 33 NOT IN DIRECTORY | RECORD NUMBER 1016 |
28. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 51 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 51 | |
| | SECTION 4/ 51 NOT IN DIRECTORY | RECORD NUMBER 1027 |
29. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 52 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 52 | |
| | SECTION 4/ 52 NOT IN DIRECTORY | RECORD NUMBER 1055 |
30. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 4, MT= 91 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=6152, MF= 4, MT= 91 | |
| | SECTION 4/ 91 NOT IN DIRECTORY | RECORD NUMBER 1083 |
31. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 16 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 16
SECTION 5/ 16 NOT IN DIRECTORY RECORD NUMBER 1112

32. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 17 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 17
SECTION 5/ 17 NOT IN DIRECTORY RECORD NUMBER 1204

33. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 22
SECTION 5/ 22 NOT IN DIRECTORY RECORD NUMBER 1247

34. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 28
SECTION 5/ 28 NOT IN DIRECTORY RECORD NUMBER 1482

35. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 32 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 32
SECTION 5/ 32 NOT IN DIRECTORY RECORD NUMBER 1622

36. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 33 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 33
SECTION 5/ 33 NOT IN DIRECTORY RECORD NUMBER 1707

37. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6152, MF= 5, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=6152, MF= 5, MT= 91
SECTION 5/ 91 NOT IN DIRECTORY RECORD NUMBER 1782

• recent Warnings:

1. Fission widths given for non-fissile nucleus, but are zero
0: Fission?

Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
=====

Retrieval Criteria-----	MAT
File 2 Mimimum Cross Section-	1.0000E-10 (Standard Option)
Reactions with No Background-	Output (Resonance Contribution)

... [501 more lines]

- fudge-4.0 Warnings:

1. The URR for this spin group needs higher energy resolution for correct representation of the average cross section
resonances / unresolved (Error # 0): URRinsufficientEnergyGrid

WARNING: More points needed in L=0 J=0.5 unresolved widths between 1.1 eV and 10. eV
 WARNING: More points needed in L=0 J=0.5 unresolved widths between 10. eV and 1.e2 eV
 WARNING: More points needed in L=0 J=1.5 unresolved widths between 1.1 eV and 10. eV
 WARNING: More points needed in L=0 J=1.5 unresolved widths between 10. eV and 1.e2 eV
 ... plus 14 more instances of this message

2. Unnormalized outgoing probability distribution
reaction label 10: n + He4 + Pr144 / Product: n / Distribution: / uncorrelated - energy - XYs2d: (Error # 0): Bad norm

WARNING: Unnormalized distribution! At energy_in = 1.e-5 eV (index 0), integral = 1.00208

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.42%

4. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.11%

- fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 4: n[multiplicity:'2'] + Pm147 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5700335.774551392 eV vs -5.9061e6 eV!

2. Calculated and tabulated Q values disagree.
reaction label 5: n[multiplicity:'3'] + Pm146 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -13359709.27670288 eV vs -1.35802e7 eV!

3. Calculated and tabulated Q values disagree.
reaction label 6: n + H1 + Nd147 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5813989.533615112 eV vs -6019640. eV!

4. Calculated and tabulated Q values disagree.
reaction label 7: n + H2 + Nd146 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -8881626.50994873 eV vs -9006630. eV!

5. Calculated and tabulated Q values disagree.
reaction label 8: n + H3 + Nd145 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -10189627.48858643 eV vs -1.03906e7 eV!

6. Calculated and tabulated Q values disagree.
reaction label 9: Pm149 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 7465607.392852783 eV vs 7264390. eV!

7. Calculated and tabulated Q values disagree.
reaction label 10: n + He4 + Pr144 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 1653773.94770813 eV vs 1.4581e6 eV!

8. Calculated and tabulated Q values disagree.
reaction label 11: H1 + Nd148-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 1518795.635162354 eV vs 1319460. eV!

9. Calculated and tabulated Q values disagree.
reaction label 12: H2 + Nd147-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -3589423.432678223 eV vs -3709520. eV!

10. Calculated and tabulated Q values disagree.
reaction label 13: H3 + Nd146-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -2624393.569335938 eV vs -2821480. eV!

11. Calculated and tabulated Q values disagree.
reaction label 14: He3 + Pr146-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6823045.671325684 eV vs -6885830. eV!

12. Calculated and tabulated Q values disagree.
reaction label 15: He4 + Pr145-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 8601285.726715088 eV vs 8409190. eV!

- njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 17
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 22
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 28
only mf4/mf5 provided

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 32
only mf4/mf5 provided

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (5): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 33
only mf4/mf5 provided

7. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (6): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided